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ADDRESS

DELIVERED BEFORE THE

Philadelphia Society for promoting Agriculture,

AT ITS ANNUAL MEETING

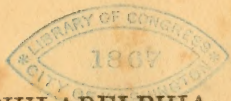
ON THE

EIGHTEENTH OF JANUARY, 1825.

BY

ROBERTS VAUX.

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PUBLISHED BY ORDER OF THE SOCIETY.



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At a meeting of the "Philadelphia Society for promoting Agriculture," held January 18th, 1825:

The annual address was delivered by Roberts Vaux, Esquire:

Whereupon, *Resolved unanimously*, That the thanks of the Society be presented to Roberts Vaux, Esquire, for his able and eloquent oration delivered this day, and that he be requested to furnish a copy for publication.

Extract from the Minutes.

WILLIAM H. KEATING, *Sec'ry.*

ADDRESS.

I COME into the presence of the society under discouraging circumstances.

The practical knowledge of farming, and rural affairs, displayed in the productions of some of my predecessors, the deep research and various learning which embody and adorn the discourses of others, and the distinguished skill and ability of all who have addressed you on similar occasions, forbid the indulgence of a hope that it will now be in my power to submit to the husbandman facts, or to suggest to the theorist speculations of much novelty or importance. Without shrinking however from the task you have assigned me, I shall esteem myself fortunate, if, as an humble labourer in the same field from which this ancient association has reaped abundant harvests, alike honourable to itself, and useful to the community, I should be enabled to glean a single sheaf worthy of its friendly notice and acceptance.

When we reflect that the art which this institution labours to cherish and improve, is coeval with the formation of human society, it is remarkable, that it should not have arrived at a higher degree of perfection. The unhappy progenitor of our race, for whose unfaithfulness the ground was cursed,

and thenceforth yielded the most noxious plants, could have had but little disposition, and perhaps less resolution, to attempt the cultivation of the soil, which every where bore testimony to the recent displeasure of the Deity. It is probable that Adam, and most of his immediate descendants, subsisted on the spontaneous productions of the vallies, the animals of the forest, and the inhabitants of the water and of the air—though Cain, we know, tilled the earth, and it is afterwards recorded that Noah applied himself to husbandry, and the planting of a vineyard.

The Egyptians made some progress in agriculture, and the ancient people of Italy were, it is believed, better husbandmen than the present. According to the authority of Virgil and other cotemporary writers, rural economy was well understood and practised by the Romans during the Augustan age. To that celebrated people Britain was indebted for much knowledge concerning the cultivation of the earth. The plough, and most of the grains now raised upon her fruitful soil, were introduced at the period of their invasion. After these martial instructors had retired from Britain, many causes operated to check the progress of improvement in husbandry; and from the Norman conquest, which brought in the feudal system, to the time of the 8th Henry, this noble art, so far from deriving aid from the lights of science, was allowed to languish, and to fall into contempt, during a succession of centuries.

It is a prejudice, irreconcilable with the general intelligence, which characterizes our countrymen, that agriculture can be availingly promoted by those only "*whose talk is of oxen, and who are employed in their labours.*" The attention of Europe was awakened towards this essential department of human industry, by an English judge, who not only prescribed modes for bettering the condition of the land, but contrived implements of husbandry, inquired into the causes, and recommended a judicious treatment, of the dis-

eases of domestic animals. He also gave plans for the improvement of farm-buildings, and the embellishment of the long neglected estates of the kingdom. Sir Anthony Fitzherbert, to whom England owes so much for the revival of agriculture and rural taste, published two works on country affairs, about the year 1534. These volumes serve, among other testimony, to prove, that what might then have been regarded as idle theory, obnoxious to the ridicule of the ignorant, has since been universally adopted, from the seemingly insignificant conception of banding wheels with iron, and the simple contrivance for harnessing a team of horses, to the more extensive operations of reclaiming and cropping land, subjects which previously had not been suggested, much less gravely and ably recommended *in a book*. From the moral and economical advice which he imparted, I cannot forbear selecting a few lessons, as worthy of respect and obedience now, though almost three hundred years have elapsed since they were first promulgated for the instruction of the farmer.

“I would advise him,” says Fitzherbert, “to rise by time in the morning, and go about his closes, pastures, fields, and specially by the hedges, and when he seeth any thing that would be amended, to write it in his tables, and if he cannot write, let him nick the defects upon a stick. As if he find any beasts, sheep, or swine, in his pastures that be not his own, and peradventure though they be his own, he would not have them to go there. Let him look,” adds our author, “if any water stands on his pastures, upon his grass, whereby he may take double hurt, both the loss of his grass, and rotting of his sheep and calves. And see if any gate be broken down, or findeth or seeth any thing amiss that should be amended. Also take heed, both early and late, at all times, what manner of people resort and come to thy house, and the cause of their coming, and specially if they bring with them pitchers, bottles, or wallets, for if thy servants be not true, they may do thee great hurt, and themselves little advantage,

wherefore they would be well looked upon.²² Agriculture was subsequently indebted to learned men such as Blythe, and Plattes, who experimented and wrote during the reign of Cromwell, and after the restoration, to Sir Richard Weston, and the ingenious Tull, who were followed by Lord Kames and others of deserved celebrity.

Leaving, however, remote times and countries, with which are associated names worthy of respectful remembrance, as the benefactors of husbandry and of mankind, I would solicit your attention towards our native land, while, with a natural and justifiable attachment, I briefly pursue this interesting subject in relation to *our own Pennsylvania*.

A century and a half has not yet elapsed since our virtuous and adventurous ancestors came hither to subdue the wilderness, and provide, from a virgin soil, the means of subsistence. In that period, the fields which they cultivated have passed from a wild, or strictly natural state, to one of greater melioration and productiveness, consequent upon tillage, until at length they have been reduced to a comparatively impoverished condition. The first settled districts were so completely worn, as within the last forty years to require various artificial means for their restoration; nor could they otherwise have supplied the wants of a rapidly increasing population, spreading over our territory, collecting in the metropolis, and in other towns which have since risen into notice, to profit by a foreign demand growing out of the desolating wars in which Europe was long and unhappily involved.

The modes of cultivation, which were of necessity originally adopted, had been unwisely pursued by the successors of the hardy conquerors of the forest long after that necessity had ceased to exist, until at length the once fruitful fields of the parents yielded but a mere competence for their children, and afforded but a pittance for the generation that followed. These results were inevitable from the system of misman-

agement which annually grew crops, of the same kind, on the same inclosures and that too without providing any nourishment for the earth, which was thus continually and generously giving off its strength. Owing to these causes, and others incident to the war of the revolution, agriculture was greatly depressed between the period of the recognition of independence, and the restoration of peace in 1783. Husbandry, in the New-England colonies, had always been unequal to the demand for bread-stuffs at home, and as the population increased, a certain portion, with characteristic enterprize, sought employment in adjoining regions on the west, whilst another part, by more perilous achievements, drew resources from the sea. The inhabitants of the southern section of the country, burdened with a wretched and enslaved race of labourers, were in a destitute condition, and the territories, beyond the great chain of mountains which traverse the whole line of our dominion, had not yet yielded to the footsteps of civilization, nor felt the powerful influences which have since extended the empire of social man to the shores of the Pacific ocean.

The first emigrants to Pennsylvania most generally were from the agricultural districts of England, and brought much information of the actual state of cultivation in the country from which oppression had driven them. In addition to this favouring circumstance, it was one of the wise provisions of the illustrious founder of the province, to appropriate to each settler so small a portion of land as to interest him in its immediate improvement, a measure which, he no doubt foresaw, would not only prevent a spirit of speculation and restlessness, but contribute to the formation of the best dispositions and habits among those who shared with him the perils and the benefits of his benevolent enterprize.

Pennsylvania at all times took the lead of the other provinces, in the amount and variety of her productions, the exportation of which, in 1751, was astonishingly great, as will

appear by the following statement, derived from an authentic source, and worthy, I think, of preservation for future reference. Eighty-six thousand bushels of wheat—one hundred and twenty-nine thousand, nine hundred and sixty barrels of flour—Ninety thousand, seven hundred and forty-three bushels of Indian corn—Five hundred and ninety-nine hogsheads, eight hundred and twelve tierces, twenty-eight thousand, three hundred and thirty-eight barrels, seven thousand, five hundred and eighty-eight quarter casks, and two hundred and forty-nine tons of bread—Nine hundred and twenty-five barrels of beef—Three thousand, four hundred and thirty-one barrels of pork—Nine thousand, eight hundred and sixty-five hogsheads, four hundred and fifty-four half-hogsheads, thirty-nine tierces, and two hundred and twenty-one barrels of flax-seed—Four millions, eight hundred and twelve thousand, nine hundred and forty-three staves—Four thousand, four hundred and ninety-one bars—one hundred and eighty-nine tons of bar, and two hundred and five tons of pig iron—Three hundred and five chests, thirty-two half chests, and fifteen quarter chests, of skins and furs—and one hundred and twelve barrels, six boxes, two tierces, and five hogsheads of ginseng, were, in that year, shipped at Philadelphia, for neighbouring and foreign markets. The value of this produce, in money, cannot be easily known; but taking wheat at 3*s.* 10*d.* corn at 3*s.* flax-seed at 2*s.* 6*d.* per bushel—beef at 50*s.* and pork at 75*s.* per barrel, which are the ascertained prices current, and venturing upon a calculation in regard to the other articles, the whole will not fall far short of one million of dollars; at a period, when, on the authority of Proud, the estimated population of the whole province could not have exceeded sixteen thousand families, or reckoning each family to consist of six, not amounting to one hundred thousand souls.* These facts

* It will be seen by the following statement of the value of Imports and Exports, and of the quantity of American and foreign tonnage entered into and departing from the districts of Boston, New York, Philadelphia, Balti-

are adduced, to exhibit the natural productiveness of the soil, and the success with which it was managed for seventy years from the arrival of the first settlers; and likewise to prove, that owing to a lamentable negligence of the adoption of means for sustaining the land under cultivation, when two-thirds, if not three-fourths, of the cleared grounds were arable, wheat, its staple product, could not have yielded, on an average, more than six bushels per acre. This deterioration gradually took place from 1760 to 1783. The prejudicial

more, Charleston, Savannah, and New Orleans, during the year ending on the 30th of September, 1824, that with a population ten times greater than that of the period in question, the domestic exports of Philadelphia, drawn for the most part from the same district of country, and including manufactures, were, in the last year, little more than three times as valuable. This interesting document, for which I am indebted to the kindness of Samuel Breck, Esq. one of the representatives in congress from this district, furnishes evidence also of the increasing commerce of Philadelphia. From the fourth or fifth, she has risen to be the second city of the United States as it regards exports, and is not far below the same rank on the scale of imports.

	IMPORTS IN			EXPORTS.		
	American Vessels.	Foreign Vessels.	Total.	Domestic	Foreign	Total.
Boston	12,695,325	130,885	12,826,210	2,204,313	4,820,079	7,024,392
N. York	34,200,627	1,768,888	34,969,515	12,410,401	9,368,480	21,778,881
Philada.	11,205,278	660,253	11,865,531	3,182,694	6,182,199	9,364,893
Baltimore	4,360,837	182,538	4,543,375	2,555,417	1,312,276	3,868,693
Charleston	1,461,519	703,021	2,164,540	7,833,708	200,369	8,034,077
Savannah	409,463	133,802	543,265	4,585,885	3,980	4,589,865
N. Orleans	3,110,261	1,429,508	4,539,769	6,442,946	1,485,864	7,928,810

TONNAGE.

	American		Foreign	
	Ent'd.	Cleared	Ent'd.	Cleared
Boston	118,780	92,312	5,192	4,667
New York	222,368	213,920	18,189	16,322
Philadelphia	76,617	76,631	4,938	5,635
Baltimore	57,159	72,922	4,981	6,017
Charleston	39,770	61,092	17,548	18,878
Savannah	17,219	32,951	11,583	11,716
New Orleans	63,305	54,139	24,261	21,996

effects of the mode of managing the land, by the immediate descendants of the early occupants, continue to be felt by those who adopt the same practice in the fertile sections of this state which have been more recently settled; and if the adventurous people who enter the wilderness, pursue, for fifteen or twenty years, the plan of draining the land of its nourishment, by successions of crops on the same fields, they will ultimately discover that their farms cannot maintain them. Many soils, which at first produced from twenty-five to thirty-five bushels of wheat per acre, have ceased to yield a third part of that quantity. Warned by experience, let them hereafter avoid a course so improvident. *Purchasers*, who do not intend themselves to settle in new countries, may disregard these considerations; but proprietors, who live remote from their estates, and who give what are termed improving leases, should guard against so formidable an evil.

It is perhaps justifiable to conclude, from the evidence we possess, that Pennsylvania, in her colonial character, furnished good examples of husbandry, and that the products of her industry were not only ample for her own supply, but that the surplus found a ready market abroad, and among her less favoured neighbours. This reputation was not uniformly maintained, nor did she resume her efforts, and rise again on the scale of agricultural importance, until she assumed the character of one of the members of the American Republic. In every sense, another era then commenced in our history, nor was its least important feature exhibited on the surface of the country.

The use of lime and gypsum, as fertilizers of the ground, the introduction of clover, and the rotation of crops, constitute the happy causes which gave the first grand impulse to the agricultural prosperity of modern Pennsylvania.

Nothing, perhaps, requires more perseverance than the effort to overcome the injudicious habits of men in connexion with the chief secular pursuit of their lives. This remark

has heretofore applied with peculiar force to the husbandmen of Pennsylvania, and the individual who here entered the lists in this fearful conflict with prejudice, must be allowed to have possessed no inconsiderable share of moral courage, united with comprehensive patriotism and benevolence.

The merit of introducing gypsum to the notice of the farmers of the United States, belongs, with various other important suggestions, to my venerable friend, who has so long, so disinterestedly, and so ably presided over this institution;—a gentleman whose distinguished services need not my voice to enlarge the plenteous reward of gratitude and respect which crown the evening of his useful day. He well knows that I would not offend him by adulation; but as an inducement to every mind desirous to put forth its energies in the good work in which he has ever taken the deepest interest, I feel bound to exhibit the surprising results which well directed and untiring efforts may accomplish. Like the early patron of husbandry and rural affairs in England, our Fitzherbert found leisure amidst the duties of a profession which gave him eminence at the bar, and subsequently distinction on the bench, to make and to give to the public his judicious experiments in agriculture.

In the year 1770, he first became acquainted with gypsum. A small quantity of which was then sent from Germany to a merchant of this city, with some information of its value as a manure, then but recently and accidentally discovered. It was said concerning it, that a labourer who had been employed in mixing stucco mortar, passed and repassed from his work to his cottage, across a sterile field. The succeeding season his path threw up a luxuriant crop of grass, which he attributed to the plaister that fell from his clothes, and was thus induced to make an experiment near his dwelling, with the remainder of the article in his possession. The effects astonished every beholder, and the cottager received a reward from his landlord for divulging the secret. Our president,

aware of these facts, began his experiments with a single bushel of gypsum, obtained from a maker of stucco ornaments in Philadelphia, and afterwards pursued and extended them in proportion to his means. Not long after about twenty tons of this valuable material came as ballast in a ship from London to this port, without the least knowledge of its worth by the captain who brought it, which stock formed the foundation of the vast improvements to our husbandry, subsequently resulting from its general use. Having altogether satisfied himself of the fertilizing effects of plaister of Paris, Judge Peters disseminated the knowledge he had acquired through many parts of Pennsylvania, and the then neighbouring provinces; but his success in persuading his countrymen to credit his assertions, and in inducing others to make trial of the sulphate of lime, was at first limited and very discouraging. He nevertheless continued his labours, and by publishing and otherwise enforcing the facts he possessed on this subject, had the happiness to witness the triumph of his doctrines, over the combined forces of ignorance, prejudice, and ridicule. What have been the consequences flowing from the use of this fertilizing principle, and how much it has contributed to the solid wealth of Pennsylvania, and of many other states in this union, is far beyond the reach of computation. The history of human concerns will furnish few such instances as the one we are now contemplating. That an individual should begin a system intended to revive an exhausted soil, by the application of a manure which at the time was not known to exist on this continent, the theatre of his experiments; that he should succeed in establishing the principle for which he contended; that he should afterwards set on foot the inquiry, where this wonderful agent could be found, so as to place it within the reach of the American Farmer, at a price which he could afford to give for it; that gypsum should be discovered in exhaustless quantities in this hemisphere, that thousands of tons of it should be annually brought, and

spread over hundreds of thousands of acres in Pennsylvania, restoring the land, and bringing forth abundance, are the astonishing results, and the high reward which this constant friend to the interests and prosperity of our husbandmen has lived to know and to enjoy. Whilst our president was thus earnestly engaged in bestowing incalculable benefits on our state and country, he was by no means unmindful of other interesting and important improvements in rural economy. His ancient patrimonial estates in the vicinity of Philadelphia, then under his immediate direction, furnished practical evidence of the sincerity and utility of his doctrines concerning agriculture. It was upon those farms that the first examples were shown of the use of lime and gypsum, of the value of several new grasses, of trench and fall ploughing, of deep culture, &c. and there also were cultivated upon a large scale, many of the roots since generally and profitably adopted. Upon his inclosures were to be seen some of the finest breeds of horses, cattle, and sheep, then known in the state. I have heard him say with what mortification he beheld, during the revolutionary war, eleven out of fourteen superior blooded colts shot down for their hides, by a party of British marauders, after in vain attempting to rescue them from such wanton destruction.

His household, too, was a pattern for the imitation of farmers in the manufacture of linen and woollen fabrics, far beyond the demand for domestic purposes; displaying an attention to a branch of business, now too much neglected by the generality of our rural fellow citizens, at an expense, I fear, of habits of simplicity, which were proverbial in former days.

About the time that gypsum was first brought, a small quantity of red clover seed also reached Pennsylvania, and was sown in gardens, and on pasture lots in the neighbourhood of this city. In the year 1773, a practical farmer*, then be-

* James Vaux.

ginning to improve his estate at Flatland Ford, in the county of Montgomery, unable to procure, on this side of the Atlantic, a sufficient quantity of this seed for his purpose, obtained from England a cask of it, which, owing to some injury sustained on the voyage, was found unfit for use. This disappointment was the more to be lamented, because his projected experiment would have been the first in that vicinity, perhaps in the state, with clover upon a large scale. This failure, moreover, prevented an increase and distribution of the seed until after the war then existing between the American colonies and the mother country. The same gentleman who thus early desired to cultivate that artificial grass, in the spring of 1785, sowed eighty pounds of clover seed on thirty-five acres of green wheat, an account of the success of which he sent to this society in 1787. In the same communication he submits the following views for the improvement of farming. "Breaking up land is perfectly understood by all our farmers, I may say to an extreme degree, which ought to be counteracted by obtaining the art of laying down land with artificial grass seed, otherwise the arable land in the old counties of Pennsylvania will in a very few years become of little value. Laying down lands properly being an object of importance on the great scale of agriculture, it is incumbent upon you to impress the necessity there is, that this art should not only be understood, but practised, by all farmers, rich or poor, let their soil be clay, loam, or any mixture whatever. The earth, like the animal body, is capable of supporting a certain degree of labour, and like it, requires proportionable nutriment, rest, and cleanliness, but withhold from the land those necessary reliefs, and like a starved, over-worked, and neglected slave, it will be worn out, and instead of making profit to the owner and benefit to the state, it will impoverish the one, and disgrace the other." He then proceeds to recommend that the legislature should allow a bounty on clover seed, and adds, "I leave the society to press this measure, for it is deserving of its notice, and the full countenance of every

legislator: I will boldly assert it will prove of more benefit to agriculture and stock in the present state of our country, than any thing that can be done. Reduce the price of clover seed, and instead of bare fields, daily washing away, you will see them covered with grass and cattle.”* Sentiments, such as these, were no doubt regarded as visionary and extravagant by the great majority of farmers at that time on the active stage of life, yet this practical instructor has lived to witness the accuracy of his opinions, and the fulfilment of his prediction, to an extent far beyond what he may have anticipated.

Next in importance to the improvement of the land by judicious modes of cropping, and the application of restoratives suited to the various qualities of the soil, are roads, bridges, canals, and the rendering of streams navigable. The husbandman will toil in vain, if the products of his labour cannot reach a market by a moderate expenditure of time and money. The necessity of facilitating the intercourse between the interior, remote parts, and the sea board of Pennsylvania, was early perceived by many of her enlightened citizens, who, in the prosecution of their designs, had to contend with difficulties similar to those which impeded the exertions to renovate her husbandry. Some improvements had been made during the provincial age of Pennsylvania, by the removal of obstructions to the descending navigation of rivers, but the first turnpike constructed on this side of the Atlantic, is that which was completed between Philadelphia and Lancaster in 1794. Since that period, more than a thousand miles of artificial road have been made of stone in various parts of the commonwealth. Bridges of great magnitude and beauty have also been thrown across our principal rivers, at an expense of more than a million and a half of dollars, whilst the utility and cost of those of an inferior grade, in nearly all the counties of the state, cannot be readily esti-

* Ten thousand bushels of clover seed have, within a few months past, been exported from Philadelphia to Europe, chiefly to England.

mated. It is now almost half a century since the noble design was formed of uniting the Delaware and Susquehanna rivers, by means of the waters of the Schuylkill and Swatara. The failure of so grand a scheme, with great pecuniary loss to those who engaged in it, vitally affected the interests of our agriculture, but the lock navigation rapidly progressing to completion on the same route, penetrating as it will to a remote interior point, hitherto inaccessible by such modes of communication, promises to all our different interests results of the greatest magnitude. The difference between transportation upon a good turnpike and upon a common road, is familiar to every one; but the difference is immense between even the best turnpike and a canal. A single horse will draw, with ease, twenty-five tons, two miles and a half per hour upon the latter, but to move an equal weight upon the former, at the same rate, would require forty horses; what a vast saving must here be made in animals and in provender, and a large part of this, too, for the benefit of the husbandman, because his stock may be less, and his saleable produce greater, and he may be enabled to carry many new articles to market, by all the difference of consumption. Canals will also promote the use of oxen instead of horses, to the acknowledged profit of the farmer.

The introduction of coal will constitute a new era in Pennsylvania. It will enable the farmers of a large district to convert grounds occupied by wood to the production of valuable crops, and lime and other manures will be transported by canals, to points which they could never otherwise have reached. Canals will likewise greatly contribute to promote the policy of the state, in the subdivision of property; and by giving additional means for sustaining a large population upon a small surface, must create new towns, new manufactories, and new markets. Had not the canal of New York eclipsed almost all similar undertakings, a distinguished place might be claimed for Pennsylvania, as a patron of inland navigation.

The works on the Schuylkill, now completed, extend one hundred and eleven miles. Forty miles of the Union canal are nearly finished, and when the latter reaches its termination, the aggregate will not be much short of two hundred miles. To encourage and promote in future the formation of canals, wherever the geological features of the territory invite, or will admit of such improvement, is at once the duty and the interest of all who seek the permanent welfare of our agriculture. In addition to the early aids afforded to the husbandry of the state, I ought not to omit the important fact, that the selection and introduction of valuable domestic animals was not disregarded, even when the minds of the early benefactors of agriculture were directed to the primary duty of increasing the products of the land. Some excellent breeds of sheep, and swine, were brought from abroad, many years ago, and great pains were taken to spread them among our farmers. But the great importance of this subject has been but recently urged with effect upon their notice. Our useful fellow citizen and associate John Hare Powel, whose indefatigable labours deserve the highest commendation, has, at much expense, imported some individuals of the best families of cattle and sheep known in Europe. His judicious and liberal design is to prove, that all the beasts which administer to our necessities, or conduce to our comforts, ought to be chosen and bred in reference to their respective qualities. The horse, for the various employments to which that noble and generous animal is so admirably fitted. The ox, whether for labour, or for the shambles. Sheep, whether most profitable for the fleece, or carcase. The cow, as adapted to the dairy, or otherwise more advantageous, as circumstances and interest may dictate. To this laudable pursuit, combined with rural affairs generally, he has succeeded in awakening the attention of a body of respectable and intelligent cultivators of their own farms, in various counties of the state, who, consti-

tuting "*The Agricultural Society of Pennsylvania*," will no doubt contribute largely to the general good.

The first volume of the memoirs of that society, containing the observations and experience of practical farmers and breeders of stock, will, I trust, be widely disseminated for the instruction and gratification of their brethren throughout our country. And although, in some respects, the association may be regarded as a rival of this institution, I am confident the members of the parent establishment, whom I now address, will never cease to contemplate, with unaffected pleasure, the prosperity and usefulness of all its descendants, however numerous they may become throughout the land. Associations of this kind have performed no small part in bringing agriculture to its present improved state, and they deserve to be classed among the most efficient means of future advancement to that dignified occupation. To these beneficent ends this society has been devoted for forty years, in the course of which it has sought information, and maintained an intercourse with similar institutions, and with individuals engaged in the promotion of improvements in the agriculture of Europe, whence it has derived not only books of great utility, but implements of husbandry of various kinds, as well as grains, grass, and other seeds, and roots, which have been here cultivated with profit. Nor is this all: the information thus obtained from abroad, and the experience of practical husbandmen at home, placed at its disposal, have been extensively and freely distributed, with acknowledged benefit. These means, various and efficient as they may seem, would have been in a great degree inoperative, but for the salubrious climate of Pennsylvania, which, co-operating with industrious habits, has formed a hardy race, whose physical and moral faculties, generously exercised, have increased the agricultural riches of the state. Corroborative of this idea it is believed that the parallelogram bounded

North-West, by the Blue-ridge,

North-East, by the Delaware,

South-East, by the Delaware, and the canal which is about to connect it with the Susquehanna, and

South-West, by the Susquehanna, contains a greater proportion of arable land of superior quality, and a greater population on a square mile, than any equal extent in the Atlantic States; whilst it cannot be doubted, that the same region enjoys advantages in mineral products, streams, &c. which few other sections of our country can boast.

Such, gentlemen, is a rapid survey of some of the natural advantages which belong to the favoured place of our nativity, and also of the means that have been employed to promote and expand the interests of our husbandry. That these efforts were beneficial no one can question, who will make a comparison of the past with the present condition of the soil, or who shall investigate, with a philosophic eye, the interesting combination of causes which have produced all the moral and intellectual results that have been adverted to. Much, however, must still be done in order to ascertain the diversified resources of the farmer, and to apply them to the increase of his skill, of his profit, of his comforts, and withal of the embellishment of his possessions. Hitherto the main object has been to renovate our husbandry upon a large scale, by means of general principles, which have been to a considerable extent successfully applied. But it may be well to invite every cultivator of the earth to inquire minutely into the character of the soil he tills, and its local advantages, so that these may be turned to the best account. The site and construction of dwelling-houses, and of other buildings on a farm, are subjects of more importance than appear to have been generally admitted. A careful disposition of the adjoining grounds might add to their utility, and materially improve their appearance. The planting of hedges, and the construction of walls, would afford ornamental, permanent, and, in the

end, the cheapest inclosures. Springs and streams of water, as an auxiliary to vegetation, are seldom resorted to, though this might be done at a small expense, and by a simple process. The proper management of *stock*, is a subject of great importance, more neglected, I believe, than any other department of rural affairs. The cultivation of roots, and the feeding of these with other nutritious ingredients, in warm messes during the winter, would allow of a useful change of diet, as essential to the health of beasts as of men; whilst care should be taken for the same ends, to keep the animals and their apartments as clean as possible. Such practices would soon establish their value by the increased profits of the dairy. The soiling of cattle, to prevent waste of pasture and manure, in the season of grass, has been tried and approved by some persons, and is worthy of further experiment.

The selection and proper care of fruit trees, although a subject now more regarded than formerly, should claim a more general notice of the cultivators of the soil. The judicious management of bees, whose products are among the luxuries of our tables, and at the same time valuable in foreign commerce, deserves attention, particularly in the neighbourhood of this metropolis, where, within my brief remembrance, the quantity of honey and bees-wax brought to market is greatly diminished, and more than threefold increased in price. Although the lamentable effects of *ardent spirits* have been frequently and most feelingly delineated, I cannot refrain from enforcing on the understanding and the heart of every farmer, the magnitude of this evil. I would invoke his patriotism, and with it every tender and generous sentiment, to aid in the extirpation of this mighty scourge. Wives abandoned and disconsolate—widows destitute—estates wasted—orphans helpless—parents bowed down with grief over the once fair promise of their sons—in a word, the most intense domestic calamities, every where utter warning, and

demand reformation. A substitute for this poisonous article may be had in cider, but more beneficially in sound malt liquor, the process for making which is simple, and the apparatus by no means expensive. As an inducement for farmers and others, who employ labourers, to substitute some wholesome beverage, would it not be wise to offer honorary premiums? The neglect of gardens in many parts of the country is obvious. They seldom contain the variety of esculents that might be cultivated without additional expense or labour, and be found valuable in point of economy, and promotive of health. I could enumerate other objects connected with the business of farming, less important, but not beneath the notice of the independent yeomen of Pennsylvania. It is time, however, to close this part of my discourse, as I propose to claim your indulgence a few moments longer, whilst I cursorily offer one other view of this extensive subject. The moralist has often taxed his ingenuity to prove, that virtue finds no congenial clime but in the country; and the poet, when happiness becomes his theme, fixing his eye, at once, upon the cottage, sings, in seducing numbers, the *exclusive* joys of those who labour "*in the fields for health unbought,*" who tread green pastures, and at harvest-home, along the margin of some flowery stream, repose their careless limbs amid the shade of spreading trees, or with enraptured ears listen to murmuring rills and warbling birds, or sometimes to the

"————— tender tale,

"Beneath the milk-white thorn, that scents the evening gale."

These captivating but airy creations of the fancy, the mirage of the morning of life, may naturally for a moment mislead our sober reason, but the meridian beams of experience must finally dissipate them. The existence of such illusions is the more to be deprecated, because, by ascribing to mere locality all that ennobles our nature and constitutes our best estate,

they arrest the development of those principles, and the exercise of those habits, which are every where necessary to the attainment of moral excellence. Where temptations are most numerous and powerful, there will resistance to evil call for the greatest exertions; and happiness, the constant attendant of virtue, must always depend on the degree of delicacy and refinement which intellectual culture, and the exercise of the generous sympathies of the heart, are sure to produce. Purity of mind does not grow like the herb of the field, nor bloom as the shrub of the garden, in obedience to the laws of insensible matter. Innocence is ever most adorned and lovely when, walking in her strength amidst the multitude, she keeps herself unspotted from the world. To the mind opened by liberal studies, and rectified by christian discipline, a country life affords abundant food for reflection and improvement, but, without these preparations, cannot conduce to virtue, more than the busy scenes of a metropolis, with its larger relative proportions of folly and of wickedness.

It must be admitted, that the seclusion of the country forbids the contemplation of human character in several of its interesting varieties, and excludes many of those objects of sympathy and beneficence which, in a compact population, every day teach striking lessons of the frailty of our nature, and urge us to the fulfilment of the highest duties belonging to our fleeting and accountable probation. Were it necessary to enter more fully into the relative moral condition of the country and the town, it might be shown that the latter would not suffer by a rigid comparison with the former. It is sufficient to say, that in the course of an investigation, incidentally involving the subject, which took place before a committee of the British parliament a few years ago, it was ascertained that the agricultural districts of England are not so free from publicly recognized crime, as those more densely peopled.

My present purpose, however, is to invite your more particular attention to the importance of moral, literary, and

scientific instruction, as calculated to promote the best interests, and real happiness of our fellow men, whether dwelling in town or country.

As a state, we are lamentably supine, considering the ability we possess, in measures for diffusing useful knowledge among all classes of our citizens. In Philadelphia, it is true, and in its vicinity, some efforts have been made to educate the mass of the population, and the system pursued has been so efficient and economical, as to recommend itself wherever, in Pennsylvania, it may be practicable to collect children into schools in sufficient numbers to give effect to Lancaster's admirable plan of education. But ultimate results, of more importance than mere elementary instruction, ought to be steadily kept in view. Daily observation confirms the truth of lord Bacon's sentiment, that "*knowledge is power.*" It is the knowledge of *principles* which enables our mechanics, artizans, and manufacturers to perfect, as they do, their various products; and all the difference observable between the rude efforts of the ignorant, and the well finished specimens of the instructed, is attributable to that superior skill which, with proper exertions, lies within the reach of all. Will not science, in like manner, augment the efficiency of the husbandman's labours, and secure to him more abundant rewards? It has not, I am aware, been customary to associate the idea of learning with the business of agriculture, and hence this art, the parent of all others, has been retarded in its progress. Chemistry, mineralogy, and botany, unfold many secrets which would prove invaluable to the farmer. It is the province of the first to investigate the nature of soils, to inquire into the causes of their fertility or barrenness, to determine the best composition of manure, and what is most calculated to render each particular kind of soil productive. The knowledge of chemistry enabled Lavoisier to double his crops in a few years, and his experience alone is sufficient to establish its utility. Possessed of this science, the husbandman comprehends the mu-

tual agency and value of all the *material* gifts of the Creator, but without it must wander in the dark, and for himself and his offspring renounce, perhaps criminally, many enjoyments, the common inheritance of his species. What better service then can *this*, or any other similar society render to humanity, than to animate the cultivators of the earth, both by precept and example, to the acquisition of scientific knowledge? The foundation in Pennsylvania, by competent individuals, of institutions like that of Hofwyl, in Switzerland, would confer incalculable benefits upon the state. Our youth might then become accomplished husbandmen, and be at the same time fitted to perform all the relative and social duties of life. The establishment which I have mentioned, is upon a larger scale than could, in the first instance, be reasonably formed here; but the plan, in its practical details, might be adopted with modifications suited to our political character and institutions.

Fellenberg is upon a farm of ample dimensions, where he furnishes to those under his care a complete education.—Commencing with the ordinary elements, he inspires, in the course of his instruction, mild and benevolent affections—enforces the importance of time, and the value of industry, and always addresses his lessons to the more noble principles of our nature. The business of the pupil is varied, and judiciously adapted to develope and invigorate his physical energies, as well as mental powers. He is taught by a regular apprenticeship not only how to use, but how to *make* implements of husbandry. He passes through a regular course of studies; the Greek, Latin, German, and French languages and literature; history, sacred and civil; mathematics, chemistry, natural philosophy, and natural history, in all its branches. Connected with the plan, is the gratuitous instruction of indigent male children of the vicinity. His establishment is represented to be so profitable, that capital invested in it has been more than doubled in twenty-two years,

after deducting the expense of educating and maintaining forty poor boys, who are taught all the mechanical trades in company with their opulent companions. The reputation and success of Fellenberg draw to him pupils from England, Scotland, Germany, and Russia, and his system has received the approbation of competent judges of merit, in other parts of Europe. Two or more institutions of this kind, properly situated in Pennsylvania, would be extremely beneficial. Young men would go forth in every way qualified to teach and to illustrate by their example, this truth, that sound religious and moral principles, united with liberal scientific knowledge, carry to the greatest height individual prosperity and public benefit, in every neighbourhood where their influence is exerted. We might look to such nurseries for able advocates of public measures, fraught with inestimable blessings to our great commonwealth; and who can predict the extent of moral grandeur which, from such an application of intellectual force, may distinguish succeeding generations.

I am thoroughly aware of the many highly cultivated minds to be found among the farmers of Pennsylvania, but who will not rejoice to witness large additions to the honourable list?

Cherishing an ardent affection for my native state, I feel anxious that, by the employment of every judicious means, she may reach the high point which her position and natural resources entitle her to hold in this family of republics. She has certain materials for greatness, which few, if any, of her sisters can command. Her early annals may fearlessly challenge a parallel with all other histories of human affairs, and her actual condition is elevated and prosperous. By deeds of peace, of justice, and of mercy, her infancy was distinguished. Her aboriginal soil owes no debt to heaven for having drunk the blood of innocence. From her virtuous founders no recompense was due for compacts violated, or wrongs inflicted on the friendly natives. Consecrated as the

asylum of the persecuted, during her primitive age, bigotry and intolerance held no dominion within her borders. Religion, and liberty, and law, here fixed their sanctuary. Let us, then, be justly proud of our illustrious origin, and in every valley, and on every hill, may virtue, intelligence, and plenty, establish our title to such a lineage, and proclaim our gratitude for an inheritance so precious.

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